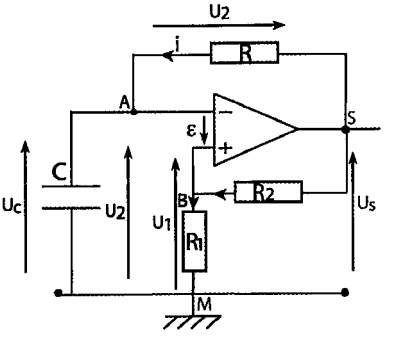
b. $T = 5 \times 0,1ms = 0,5ms$

$$\delta = \frac{T_1}{T} = 0,5$$

c. $T = 2RCLn3 \Rightarrow C = \frac{T}{2RLn3} = \frac{0,5.10^{-3}}{2.10^3 Ln3} = 2,28.10^{-7} F$

5



1.a

$U_1 = R_1 i_2$

$U_s = (R_1 + R_2) i_2$

$\Rightarrow i_2 = \frac{U_s}{R_1 + R_2}$

D'où $U_1 = \frac{R_1}{R_1 + R_2} U_s$

b. $U_2 = U_1 - \varepsilon \Rightarrow \varepsilon = U_1 - U_2$ *avec* U_2 la tension d'entrée

$$\Rightarrow \varepsilon = \frac{R_1}{R_1 + R_2} U_s - u_2$$

Ainsi. Si $\varepsilon > 0$, $u_s = +U_{sat} \Rightarrow \frac{R_1}{R_1 + R_2} U_{sat} - u_2 > 0$

Ce qui donne $u_2 < \frac{R_1}{R_1 + R_2} U_{sat} = V_{b_2}$

Si $\varepsilon < 0$, $u_s = -U_{sat} \Rightarrow -\frac{R_1}{R_1 + R_2} U_{sat} - U_2 < 0$

Ce qui donne $U_2 > -\frac{R_1}{R_1 + R_2} U_{sat} = V_{b_1}$

2. $u_s - u_R - u_c = 0 \Rightarrow u_c + Ri = U_s$ *or* $i = \frac{dq}{dt}$

et $q = c.u_c \Rightarrow i = c.\frac{duc}{dt}$ *d'où*

$$u_c + RC\frac{duc}{dt} = u_s$$

Qarray.tn -Agra Elech- Qarray.tn